

REMARKS

Status of the Application:

Claims 1-20 are the claims of record of the application. Claims 1-20 have been rejected.

Amendments to the claims

Applicant has amended the claims to overcome the rejection under 35 USC 112. Applicant also has added clarity to each independent claim to indicate that the data produced is for printing graphics. Applicant has also amended the media claims to more clearly recite that each is a computer readable storage medium. Applicant has also added to each independent claim that either a clipping mask is created, or compensation for possible bleeding is carried out, or both the mask creation and the bleed compensation occur.

Claim Rejections -35 USC § 112 Second Paragraph (Indefiniteness)

In paragraph 2 of the Office Action, Claims 1, 14, 16-17 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Office rejected the recitation of "said computer-generated image" when no indication was present whether it was a 2D or 3D image for insufficient antecedent basis. Applicant has amended the claim to clearly specify that these refer to "said three-dimensional computer-generated image" for which there is antecedent basis. This overcomes the rejection, and withdrawal of the rejections under 35 USC 112 is respectfully requested.

Claim Rejections -35 USC § 103

In paragraph 4 of the office action, Claims 1-17 and 19-20 were rejected under 35 U.S.C. 103 as being unpatentable over Score! X Training Manual and User Guide, product of Dimensional Impressions Score! X, © 2002 Dimensional CAD/CAM Systems, Inc, Encino, CA (hereinafter Score!X) in view of Tacke, US 2003/0098994. Furthermore, in paragraph 5 of the office action, Claims 18 was rejected under 35 U.S.C. 103 as being unpatentable over Score!X in view of Tacke and further in view of well-known art.

Overview:

Applicant wishes again to point out that Score!X is a product that now belongs to the assignee of the present invention. Even in its newer current form, their Score!X product cannot achieve the steps of each independent claim.

Applicant's arguments and amendments submitted 30 June 2008 to the first Office Action of 2 April 2008 that first cited Score!X against the claims were fully considered and found convincing. Upon further consideration, a new ground(s) of rejection(s) were made, and that action made final. Applicant amended the claims, and filed an after final response with an RCE. Those arguments must have been convincing, because in response, the Office mailed the present Office Action that again rejected the claims over Score!X. The response filed in the after final response with the RCE is applicable to the present rejection also.

To show obviousness, the office is required to show that each of the limitation is either in the cited reference or obvious. If the Office is citing a combination of references, there also must be some reasonable motivation to combine.

Applicant stands by its previous arguments and submits that those are sufficient to overcome the present rejection.

However, purely in the interest of bringing the Application to allowance, Applicant has added the feature to each independent claim that either a clipping mask is created, or compensation for possible bleeding is carried out, or both the mask creation and the bleed

compensation are carried out. Such features are not in any of the cited references, nor obvious.

Claim 1:

With respect to claim 1, the Office needs to show that each of the following limitations is taught, suggested, or obvious.

- (a) accepting structural information relating to a carton constructed of a planar substrate that will be cut and folded to yield a three-dimensional carton having surface regions that will be printed with graphics on the substrate to form the carton;
- (b) creating a three-dimensional computer-generated image of said carton on a computer monitor;
- (c) accepting said graphics or interacting with a user to design said graphics to cover said surface regions of said carton;
- (d) interacting with said user to superimpose said graphics accepted or designed at step (c) wherein said three-dimensional computer-generated image includes said superimposed graphics;
- (e) interacting with said user to manipulate, as required, said graphics accepted or designed at step (c) to cover relevant said regions as viewed on said three-dimensional computer-generated image on said computer monitor;
- (f) receiving from said user, said user confirming from visualizing said three-dimensional computer-generated image created at step (c), an indication of acceptability of graphics covering relevant said regions, and modifications, if required, of said graphics; and

(g) determining and outputting computer-readable data containing said accepted or designed graphics whose acceptability was received at step (f), said computer-readable data usable for printing of said graphics upon at least some surface regions of said planar substrate,

wherein the method further comprises at least one of

- (i) the step of generating at least one clipping mask to avoid printing on a surface of said carton that is not visible when fabrication of said carton is complete, and/or
- (ii) the step of identifying regions of graphics to be printed on said carton that are likely to experience printing ink bleeding and compensating for such bleeding in laying out said regions of said graphics.

Description of Score!X

Both the present application and Score!X are for the design of cartons, and each provides the ability to view a structural design of a carton in a three-dimensional rendering of the carton on a computer monitor.

An operator operating Score!X is able to accept and produce on a 2-D display data for folding a carton. Score!X allows graphics to be added to a 2-D design. There are two ways of placing graphics on designs in Score!X. One is using the Graphics button on the 2-D section for simple graphics from a very limited set of simple graphical elements (see pages 13, 14, and 15), and the second is using the Graphics menu to load full-size graphic layouts that *were* designed *specifically for a given carton* (page 12 and bottom of page 15).

The outside graphic files are “*loaded onto a 2D carton design*” (see page 43). “This one-time load will load the graphic design on top of the 2-D carton design.” It is assumed that the graphics has the correct shape. See “designed specifically for a given carton” and “Remember, if a graphic is not scaled properly, use the View All button on the toolbar to automatically scale it to the carton” (page 46).

Score!X then “folds-up” the combination to display a rendering of the three-dimensional carton with the graphics on the panels and/or flaps.

Score!X describes manipulating *the rendering*, e.g., by selecting what colors are shown in the 3-D rendering (page 39), how edges are displayed (page 40). These colors and other manipulations are for manipulating the rendering, and not for changing the 2-D file that will eventually be printed for constructed cartons. As is stated in the “Tip” on page 39 and the last paragraph on Page 40, “this is useful when saving a Score!X 3-D drawing (a drawing that can be rotated in space) as a flat 2-D Bitmap image (for use in a non-3-D program such as Illustrator).”

Dimension is used in the 2-D tab environment of Score!X dimension the carton design. This function will automatically dimension a drawing (that is, a 2-D design). It lays out dimensions in a score-to-score and overall blank size format. See page 47. Score!X then can carry out blank and waste calculations based on a given 2-D carton design (page 48).

With respect to feature (a), the Office stated that having surface regions that will be **printed with graphics** is taught by Score!X’s printing shown on page 30–32. This is not so. Pages 30–32 show printing of the screen. See the example of the Print Preview of page 31 and top of page 32. What is shown is 2-D structural design, with no graphics thereon. However, Score!X does accept structural design data, e.g., CAD data.

With respect to feature (c), while Score!X does teach accepting graphics, Score!X does not teach or suggest interacting with a user to design said graphics to cover said surface regions of said carton. The part cited by the examiner only refers to loading full-size graphics that have already been predesigned specifically to cover said surface regions.

With respect to features (d) and (e), while Score!X does teach interacting with said user to manipulate, as required, said graphics accepted or designed at step (c), Score!X does so purely on the 2-D view. The 3-D view is used only to then see what the design on the 2-D would look like. There is no interacting with said user to manipulate, as required, said graphics accepted or designed at step (c) to *cover relevant said regions as viewed on said three-dimensional computer-generated image on said computer monitor*. The part cited by the examiner only refers to loading full-size graphics that have already been predesigned specifically to cover said surface regions. Thus Score!X does not provide for any design of graphics or manipulation of the graphics itself, e.g., for manipulating the graphics which will eventually be printed on the carton while viewing a three dimensional

rendering of the carton and graphics. That is, or Score!X fails to describe or make obvious the combination of steps (d) and (e).

The Office readily concedes that **feature (g)** is not taught or suggested by Score!X, but asserts feature (g) is obvious over Score!X in view of Tacke. See below while that aspect fails.

While the above, and the previously presented arguments are sufficient to show that the Office has filed to show the elements of Score!X suggest or teach or make obvious elements (a) to (g), purely in order to rapidly bring this application to allowance, Applicant has added the method of claim 1 include features (i) or feature (ii), or both features (i) and (ii).

Feature (i) related to clipping masks is in claim 3, and was asserted by the Office, to teach in page 40 in Score!X. Score!X describes manipulating *the rendering*, e.g., by selecting what colors are shown in the 3-D rendering (page 39), and how edges are displayed in such a rendering (page 40). This is unrelated to producing a clipping mask. The edge function is for the visual rendering of the 3-D as an image, e.g., for re-display or manipulation. As is stated in the last paragraph on Page 40, “this is useful when saving a Score!X 3-D drawing (a drawing that can be rotated in space) as a flat 2-D *Bitmap* image (for use in a non-3-D program such as Illustrator).” A bitmap image, e.g., does not include a clipping mask. The Office has failed to show feature (i) and also that claim 3 is unpatentable.

Furthermore, Tacke does not mention a clipping mask or any like feature.

Feature (ii) is also in claim 4 and related to identifying areas that are likely to experience printing ink bleeding and compensating for such bleeding. The Office asserts such bleed compensation is taught in page 43 of Score!X. Applicants respectfully disagree. Page 43 simply describes the different file formats that graphics can be loaded from, and the different file formats that files can be saved in. No bleed compensation is mentioned anywhere in Score!X.

Similarly, Tacke does not mention bleed compensation or any like feature.

Description of Tacke

Tacke deals with a similar field -- package design. FIGS. 1-7 and paragraphs [0002] to [0009] describe what Tacke calls a “conventional working sequence” for creating and producing packaging. Such packaging can be produced, for example, using Score!X for seeing a 3D proof of the packaging with graphics placed on it, i.e., folding a 2D design.

Paragraph [0012] described in summary form as a method Tacke’s contribution: a method of producing **proof data** for a blank of a package in an electronic reproduction system for packages, including the steps of A) linking CAD data and graphic data to form blank data, producing, from the blank data, printing data describing a printed sheet having the blank, and deriving the proof data from the blank of the printing data.

Note that the proof system accepts data 8 from the sheet assembly system. There is no arrow in the opposite direction. Note also that Tacke discloses explicitly (see paragraph [0013]) that changes are made to the graphic data **during the production of the printing data**. Thus, consistently, Tacke does not teach the design being modified by the user after being viewed on a three-dimensional display.

Only after such work has been concluded is the proof data 8 from a blank 14 of the finished mounted printed sheet produced and passed on to the proof system 7, the data 8 being selected automatically or by the operator. Such a process ensures that the 2-D proof or 3-D proof displayed or printed out in the proof system 7 always agrees exactly with the final appearance of the package produced.” Note that the proof system accepts data 8 from the sheet assembly system. There is no arrow in the opposite direction.

Note also that Tacke discloses explicitly that changes are made to the graphic data **during the production of the printing data**. Thus, consistently, Tacke does not teach the design being modified by the user after being viewed on a three-dimensional display.

Thus each of Score!X and Tacke, and also the combination of Score!X and Tacke fails to teach or make obvious the combination of key steps (e) and (f) in the invention as recited in claim 1 (as amended). For example, while it might be argued that Tacke does disclose an indication of acceptability of graphics covering relevant said regions, Tacke does not disclose modifications, if required, of said graphics. As stated in Tacke, all modifications of graphics are done **during the production of the printing data**. Furthermore, the proof data 8 from a blank 14 of the finished mounted printed sheet is

produced and passed on to the proof system 7 *only after such work as changes to the graphic data 4 that are required because of production conditions, such as changed trim allowances has been concluded.*

Feature (i) related to clipping masks is also in claim 3. Tacke does not mention a clipping mask or any like feature.

Feature (ii) is also in claim 4 and related to identifying areas that are likely to experience printing ink bleeding and compensating for such bleeding. Tacke does not mention bleed compensation or any like feature.

From this, it would be far from obvious for one of ordinary skill in the art to come up with the method claimed in claim 1 (as amended).

Thus, the Office has failed to show that each of Score!X, Tacke, and the combination of Score!X and Tacke teaches or makes obvious claim 1. Claim 1 (as amended) is allowable over the cited references.

Other Independent claims

Independent claim 8 (as amended) includes means for creating a three-dimensional computer-generated image of said carton displayable on said monitor, said image including means to superimpose user-manipulable graphics according to said accepted or designed graphics on said computer-generated image displayed on said monitor, *wherein said user can confirm from visualizing said three-dimensional computer-generated image acceptability of said graphics, and can modify, as required, said graphics.* Claim 8 includes also features similar to (i) and (ii) of claim 1. As argued above, the Office has failed to show that each of Score!X, Tacke, and the combination of Score!X and Tacke teaches or makes obvious the features. Claim 8 (as amended) is allowable over the cited references.

Independent claim 14 (as amended) includes a computer-readable medium storing a software program that when executed by a computer processor will carry out a method comprising steps analogous to the steps of the computer implemented method of claim 1. As argued for claim 1, each of Score!X, Tacke, and the combination of Score!X and Tacke fails to teach or makes obvious all the steps recited in the method recited in claim 14 (as amended). Claim 14 includes also features similar to (i) and (ii) of claim 1. Claim 14 (as amended) is allowable over the cited references.

Independent claim 16 (as amended) recited a planar substrate having at least some surface regions printed with graphics. The substrate is cuttable and foldable to create a three-dimensional carton. The substrate produced by a computer-implemented method comprising steps that include steps analogous to those of claim 1. Claim 16 includes also features similar to (i) and (ii) of claim 1. As argued for claim 1, each of Score!X, Tacke, and the combination of Score!X and Tacke fails to teach or makes obvious all the steps recited in the method recited in claim 16 (as amended). Claim 16 (as amended) is allowable over the cited references.

Independent claim 17 (as amended) recited a carton formed from a planar substrate that was printed and cut and subsequently folded to yield a three-dimensional carton having outer surface regions printed with graphics. The carton produced by a computer-implementable process that includes steps analogous to method claim 1. Claim 17 includes also features similar to (i) and (ii) of claim 1. As argued for claim 1, each of Score!X, Tacke, and the combination of Score!X and Tacke fails to teach or makes obvious all the steps recited in the process recited in claim 17 (as amended).

Thus the Office has files to provide the necessary prima facie case for obviousness of each of the independent claims.

Allowance of the independent claims is respectfully requested.

All other claims are dependent on these allowable claims, and therefore, for at least this reason, are allowable over the cited references.

Dependent claims 3, 10, and 20

Each of these includes feature (i) or a similar feature that was argued above to not be taught or made obvious by Score!X alone or in combination with Tacke. Hence each of these claims is allowable.

Dependent claims 4 and 11

Each of these includes feature (ii) or a similar feature that was argued above to not be taught or made obvious by Score!X alone or in combination with Tacke. Hence each of these claims is allowable.

Thus, even if Examiner remains unconvinced by Applicants' arguments for the independent claims, Examiner's rejections of dependent claims under 35 USC 103(a) are also believed overcome.

For these reasons, and in view of the above amendment, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Conclusion

The Applicants believe all of Examiner's rejections have been overcome with respect to all remaining claims (as amended), and that the remaining claims are allowable. Action to that end is respectfully requested.

If the Examiner has any questions or comments that would advance the prosecution and allowance of this application, an email message to the undersigned at dov@inventek.com, or a telephone call to the undersigned at +1-510-547-3378 is requested.

Respectfully Submitted,

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Date

/Dov Rosenfeld/ #38687
Dov Rosenfeld, Reg. No. 38687

Address for correspondence:

Dov Rosenfeld
5507 College Avenue, Suite 2,
Oakland, CA 94618
Tel. 510-547-3378
Fax: +1-510-291-2985
Email: dov@inventek.com